# State Maps and Prescriptive Packages

## April 2000

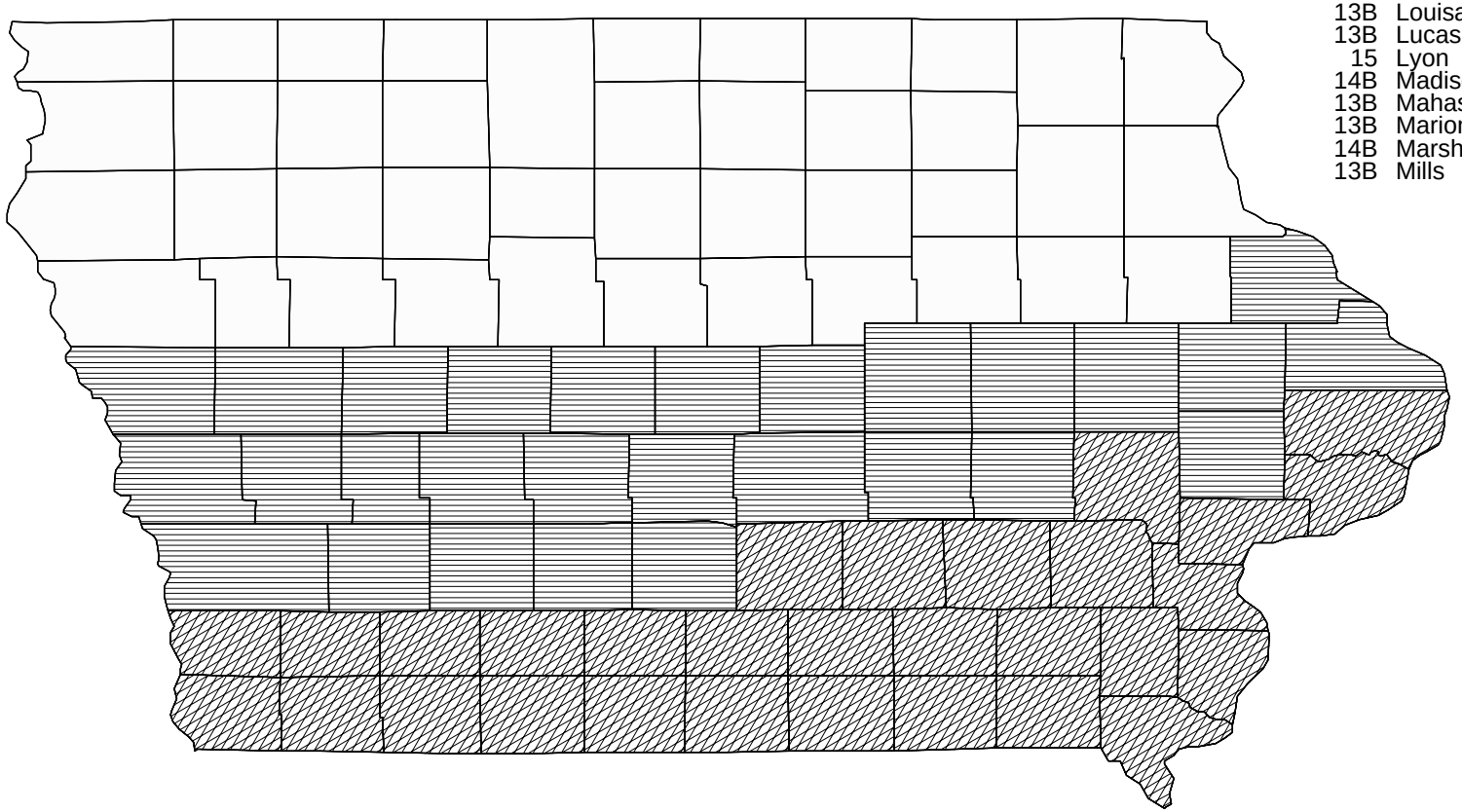
The State Maps and Prescriptive Packages contain supporting materials that are needed when using the Envelope and Mechanical Compliance Guides. Insulation and other building envelope requirements and some mechanical system requirements vary by climate. The State Maps divide the United States into 33 different climate zones at a county level. Zones are numbered from 1 through 19 (consistent with the IECC and MEC*check* climate zones) and have a, b, and c designations to reflect climate differences that affect cooling; e.g., cooling degree days and solar radiation. The climate maps are unchanged from Version 1.

To determine the climate zone to use with your building, locate the map for your state and identify the zone number from the legend or county list.

To determine insulation and other building envelope requirements, find the prescriptive package number corresponding to your climate zone. The *Envelope Compliance Guide* employs a package approach that requires all components in your design to meet or exceed the prescribed efficiency levels contained in the prescriptive package. If you find the prescriptive packages too constraining, consider using the COM*check-EZ* software, which allows tradeoffs among building envelope components.

# IOWA

| Zone | County |
|---|---|
| 14B | Adair |
| 13B | Adams |
| 15 | Allamakee |
| 13B | Appanoose |
| 14B | Audubon |
| 14B | Benton |
| 15 | Black Hawk |
| 14B | Boone |
| 15 | Bremer |
| 15 | Buchanan |
| 15 | Buena Vista |
| 15 | Butler |
| 15 | Calhoun |
| 14B | Carroll |
| 14B | Cass |
| 14B | Cedar |
| 15 | Cerro Gordo |
| 15 | Cherokee |
| 15 | Chickasaw |
| 13B | Clarke |
| 15 | Clay |
| 15 | Clayton |
| 13B | Clinton |
| 14B | Crawford |
| 14B | Dallas |
| 13B | Davis |
| 13B | Decatur |
| 15 | Delaware |
| 13B | Des Moines |
| 15 | Dickinson |
| 14B | Dubuque |
| 15 | Emmet |
| 15 | Fayette |
| 15 | Floyd |
| 15 | Franklin |
| 13B | Fremont |
| 14B | Greene |
| 15 | Grundy |
| 14B | Guthrie |
| 15 | Hamilton |
| 15 | Hancock |
| 15 | Hardin |
| 14B | Harrison |
| 13B | Henry |
| 15 | Howard |
| 15 | Humboldt |
| 15 | Ida |
| 14B | Iowa |
| 14B | Jackson |
| 14B | Jasper |
| 13B | Jefferson |
| 13B | Johnson |
| 14B | Jones |
| 13B | Keokuk |
| 15 | Kossuth |
| 13B | Lee |
| 14B | Linn |
| 13B | Louisa |
| 13B | Lucas |
| 15 | Lyon |
| 14B | Madison |
| 13B | Mahaska |
| 13B | Marion |
| 14B | Marshall |
| 13B | Mills |
| 15 | Mitchell |
| 14B | Monona |
| 13B | Monroe |
| 13B | Montgomery |
| 13B | Muscatine |
| 15 | Obrien |
| 15 | Osceola |
| 13B | Page |
| 15 | Palo Alto |
| 15 | Plymouth |
| 15 | Pocahontas |
| 14B | Polk |
| 14B | Pottawattamie |
| 14B | Poweshiek |
| 13B | Ringgold |
| 15 | Sac |
| 13B | Scott |
| 14B | Shelby |
| 15 | Sioux |
| 14B | Story |
| 14B | Tama |
| 13B | Taylor |
| 13B | Union |
| 13B | Van Buren |
| 13B | Wapello |
| 14B | Warren |
| 13B | Washington |
| 13B | Wayne |
| 15 | Webster |
| 15 | Winnebago |
| 15 | Winneshiek |
| 15 | Woodbury |
| 15 | Worth |
| 15 | Wright |



## COMcheck-EZ™ Prescriptive Packages  Climate Zone 13b

| Envelope Component | Low Fenestration Area (0-10% Window-Wall Ratio) | | | Medium Fenestration Area (10%-25% Window-Wall Ratio) | | | High Fenestration Area (25%-40% Window-Wall Ratio) | | | Very High Fenestration Area (40%-50% Window-Wall Ratio) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Walls (a,b)** | No Framing | Metal Framing | Wood Framing | No Framing | Metal Framing | Wood Framing | No Framing | Metal Framing | Wood Framing | No Framing | Metal Framing | Wood Framing |
| **Framed** *Minimum Cavity R-Value (c)* | NA | 13 | 11 | NA | 13 | 11 | NA | 13 | 11 | NA | 13 | 13 |
| **Any Spacing** *Minimum Continuous R-Value (d)* | NA | 0 | 0 | NA | 0 | 0 | NA | 0 | 0 | NA | 7 | 3 |
| **CMU, 8 in. or greater** *Minimum Cavity R-Value* | NA | 11 | 11 | NA | 11 | 11 | NA | 11 | 11 | NA | 11 | 11 |
| **with Integral Insulation(e)** *Minimum Continuous R-Value* | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 |
| **All Other** *Minimum Cavity R-Value* | NA | 11 | 11 | NA | 11 | 11 | NA | 11 | 11 | NA | 11 | 11 |
| **Masonry Walls(f)** *Minimum Continuous R-Value* | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 | 5 | 0 | 0 |
| **Windows** | No Projection | [3].25 Projection | [3].5 Projection | No Projection | [3].25 Projection | [3].5 Projection | No Projection | [3].25 Projection | [3].5 Projection | No Projection | [3].25 Projection | [3].5 Projection |
| *Maximum Solar Heat Gain Coefficient* | Any | Any | Any | 0.5 | 0.6 | 0.7 | 0.4 | 0.5 | 0.6 | 0.4 | 0.5 | 0.6 |
| *Maximum U-Factor* | Any | Any | Any | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 |
| **Skylight (Limit 3% of Roof Area)** | | | | | | | | | | | | |
| *Maximum U-Factor* | | 0.8 | | | 0.8 | | | 0.8 | | | 0.8 | |
| **Roof** | Continuous Insulation | or | Roof Cavity Insulation | Continuous Insulation | or | Roof Cavity Insulation | Continuous Insulation | or | Roof Cavity Insulation | Continuous Insulation | or | Roof Cavity Insulation |
| **All-Wood Joist/Truss** *Minimum R-Value* | 18 | | 25 | 19 | | 25 | 23 | | 30 | 23 | | 30 |
| **Nonwood Joist/Truss** *Minimum R-Value* | 19 | | 25 | 20 | | 25 | 24 | | 30 | 24 | | 30 |
| **Concrete Slab or Deck** *Minimum R-Value* | 18 | | NA | 19 | | NA | 23 | | NA | 23 | | NA |
| **Metal Purlin with Thermal Break** *Minimum R-Value* | 19 | | 30 | 20 | | 30 | 24 | | X | 24 | | 38 |
| **Metal Purlin without Thermal Break** *Minimum R-Value* | 19 | | X | 20 | | X | 24 | | X | 24 | | 49 |
| **Floor** | Continuous Insulation | or | Cavity Insulation | Continuous Insulation | or | Cavity Insulation | Continuous Insulation | or | Cavity Insulation | Continuous Insulation | or | Cavity Insulation |
| **All-Wood Joist/Truss** *Minimum R-Value* | 17 | | 19 | 17 | | 19 | 17 | | 19 | 17 | | 19 |
| **Nonwood Joist/Truss** *Minimum R-Value* | 17 | | 25 | 17 | | 25 | 17 | | 25 | 17 | | 25 |
| **Concrete Slab or Deck** *Minimum R-Value* | 17 | | NA | 17 | | NA | 17 | | NA | 17 | | NA |
| **Slab Edge or Basement Walls** | Insulation | | | Insulation | | | Insulation | | | Insulation | | |
| *Minimum R-Value* | 0 | | | 0 | | | 8 | | | 8 | | |

Notes:

(a) For walls next to unconditioned spaces, use the Low Fenestration Area wall requirements.

(b) Where values are shown for both cavity and continuous insulation, both requirements must be met.

(c) Cavity insulation is insulation between framing members or furring strips and does not refer to integral insulation in CMUs.

(d) Continuous insulation is insulation that is continuous across structural members, and its effectiveness is undimished by compression or bridging.

(e) Integral insulation in concrete masonry units may be perlite, vermiculite, or other insulating material. Minimum R-values are in addition to insulation in CMU voids.

(f) Use of the Other Masonry Walls category is restricted to walls weighing 35 lb/ft2 or more; lightweight masonry veneers and unfilled CMUs <8 in. in thickness do not qualify.

- "NA" indicates the category is not applicable.
- A minimum R-value of zero indicates no insulation is required.
- "Any" indicates any available product will comply.
- "X" indicates no complying option exists in the prescriptive packages.

## COMcheck-EZ™ Prescriptive Packages  Climate Zone 14b

| Envelope Component | Low Fenestration Area (0-10% Window-Wall Ratio) | | | | Medium Fenestration Area (10%-25% Window-Wall Ratio) | | | | High Fenestration Area (25%-40% Window-Wall Ratio) | | | | Very High Fenestration Area (40%-50% Window-Wall Ratio) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Walls (a,b)** | No Framing | or | Metal Framing | or Wood Framing | No Framing | or | Metal Framing | or Wood Framing | No Framing | or | Metal Framing | or Wood Framing | No Framing | or | Metal Framing | or Wood Framing |
| **Framed** *Minimum Cavity R-Value (c)* | NA | | 13 | 11 | NA | | 13 | 11 | NA | | 13 | 11 | NA | | 13 | 13 |
| **Any Spacing** *Minimum Continuous R-Value (d)* | NA | | 3 | 0 | NA | | 3 | 0 | NA | | 3 | 0 | NA | | 7 | 3 |
| **CMU, 8 in. or greater** *Minimum Cavity R-Value* | NA | | 11 | 11 | NA | | 11 | 11 | NA | | 11 | 11 | NA | | 11 | 11 |
| **with Integral Insulation(e)** *Minimum Continuous R-Value* | 5 | | 0 | 0 | 5 | | 0 | 0 | 5 | | 0 | 0 | 5 | | 0 | 0 |
| **All Other** *Minimum Cavity R-Value* | NA | | 11 | 11 | NA | | 11 | 11 | NA | | 11 | 11 | NA | | 11 | 11 |
| **Masonry Walls(f)** *Minimum Continuous R-Value* | 5 | | 0 | 0 | 5 | | 0 | 0 | 5 | | 0 | 0 | 5 | | 0 | 0 |
| **Windows** | No Projection | | [3].25 Projection | [3].5 Projection | No Projection | | [3].25 Projection | [3].5 Projection | No Projection | | [3].25 Projection | [3].5 Projection | No Projection | | [3].25 Projection | [3].5 Projection |
| *Maximum Solar Heat Gain Coefficient* | Any | | Any | Any | 0.5 | | 0.6 | 0.7 | 0.4 | | 0.5 | 0.6 | 0.4 | | 0.5 | 0.6 |
| *Maximum U-Factor* | 0.7 | | 0.7 | 0.7 | 0.5 | | 0.5 | 0.5 | 0.5 | | 0.5 | 0.5 | 0.4 | | 0.4 | 0.4 |
| **Skylight (Limit 3% of Roof Area)** | | | | | | | | | | | | | | | | |
| *Maximum U-Factor* | | | 0.8 | | | | 0.8 | | | | 0.8 | | | | 0.8 | |
| **Roof** | Continuous Insulation | or | | Roof Cavity Insulation | Continuous Insulation | or | | Roof Cavity Insulation | Continuous Insulation | or | | Roof Cavity Insulation | Continuous Insulation | or | | Roof Cavity Insulation |
| **All-Wood Joist/Truss** *Minimum R-Value* | 19 | | | 25 | 19 | | | 25 | 23 | | | 30 | 23 | | | 30 |
| **Nonwood Joist/Truss** *Minimum R-Value* | 20 | | | 25 | 20 | | | 25 | 24 | | | 30 | 24 | | | 30 |
| **Concrete Slab or Deck** *Minimum R-Value* | 19 | | | NA | 19 | | | NA | 23 | | | NA | 23 | | | NA |
| **Metal Purlin with Thermal Break** *Minimum R-Value* | 20 | | | 30 | 20 | | | 30 | 24 | | | X | 24 | | | 38 |
| **Metal Purlin without Thermal Break** *Minimum R-Value* | 20 | | | X | 20 | | | X | 24 | | | X | 24 | | | 49 |
| **Floor** | Continuous Insulation | or | | Cavity Insulation | Continuous Insulation | or | | Cavity Insulation | Continuous Insulation | or | | Cavity Insulation | Continuous Insulation | or | | Cavity Insulation |
| **All-Wood Joist/Truss** *Minimum R-Value* | 19 | | | 25 | 19 | | | 25 | 19 | | | 25 | 19 | | | 25 |
| **Nonwood Joist/Truss** *Minimum R-Value* | 19 | | | 25 | 19 | | | 25 | 19 | | | 25 | 19 | | | 25 |
| **Concrete Slab or Deck** *Minimum R-Value* | 19 | | | NA | 19 | | | NA | 19 | | | NA | 19 | | | NA |
| **Slab Edge or Basement Walls** | Insulation | | | | Insulation | | | | Insulation | | | | Insulation | | | |
| *Minimum R-Value* | 0 | | | | 8 | | | | 8 | | | | 8 | | | |

Notes:

(a) For walls next to unconditioned spaces, use the Low Fenestration Area wall requirements.

(b) Where values are shown for both cavity and continuous insulation, both requirements must be met.

(c) Cavity insulation is insulation between framing members or furring strips and does not refer to integral insulation in CMUs.

(d) Continuous insulation is insulation that is continuous across structural members, and its effectiveness is undimished by compression or bridging.

(e) Integral insulation in concrete masonry units may be perlite, vermiculite, or other insulating material. Minimum R-values are in addition to insulation in CMU voids.

(f) Use of the Other Masonry Walls category is restricted to walls weighing 35 lb/ft2 or more; lightweight masonry veneers and unfilled CMUs <8 in. in thickness do not qualify.

- "NA" indicates the category is not applicable.
- A minimum R-value of zero indicates no insulation is required.
- "Any" indicates any available product will comply.
- "X" indicates no complying option exists in the prescriptive packages.

## COMcheck-EZ™ Prescriptive Packages  Climate Zone 15

| Envelope Component | Low Fenestration Area (0-10% Window-Wall Ratio) | | | | Medium Fenestration Area (10%-25% Window-Wall Ratio) | | | | High Fenestration Area (25%-40% Window-Wall Ratio) | | | | Very High Fenestration Area (40%-50% Window-Wall Ratio) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Walls (a,b)** | No Framing | or | Metal Framing | or Wood Framing | No Framing | or | Metal Framing | or Wood Framing | No Framing | or | Metal Framing | or Wood Framing | No Framing | or | Metal Framing | or Wood Framing |
| **Framed** *Minimum Cavity R-Value (c)* | NA | | 13 | 11 | NA | | 13 | 11 | NA | | 13 | 11 | NA | | 13 | 13 |
| **Any Spacing** *Minimum Continuous R-Value (d)* | NA | | 3 | 0 | NA | | 3 | 0 | NA | | 3 | 0 | NA | | 7 | 4 |
| **CMU, 8 in. or greater** *Minimum Cavity R-Value* | NA | | 11 | 11 | NA | | 11 | 11 | NA | | 11 | 11 | NA | | 13 | 11 |
| **with Integral Insulation(e)** *Minimum Continuous R-Value* | 5 | | 0 | 0 | 5 | | 0 | 0 | 5 | | 0 | 0 | 5 | | 0 | 0 |
| **All Other** *Minimum Cavity R-Value* | NA | | 11 | 11 | NA | | 11 | 11 | NA | | 13 | 11 | NA | | 13 | 11 |
| **Masonry Walls(f)** *Minimum Continuous R-Value* | 5 | | 0 | 0 | 5 | | 0 | 0 | 6 | | 0 | 0 | 6 | | 3 | 0 |
| **Windows** | No Projection | | [3].25 Projection | [3].5 Projection | No Projection | | [3].25 Projection | [3].5 Projection | No Projection | | [3].25 Projection | [3].5 Projection | No Projection | | [3].25 Projection | [3].5 Projection |
| *Maximum Solar Heat Gain Coefficient* | Any | | Any | Any | 0.5 | | 0.6 | 0.7 | 0.5 | | 0.6 | 0.7 | 0.4 | | 0.5 | 0.7 |
| *Maximum U-Factor* | 0.7 | | 0.7 | 0.7 | 0.5 | | 0.5 | 0.5 | 0.4 | | 0.4 | 0.4 | 0.4 | | 0.4 | 0.4 |
| **Skylight (Limit 3% of Roof Area)** | | | | | | | | | | | | | | | | |
| *Maximum U-Factor* | 0.6 | | | | 0.6 | | | | 0.6 | | | | 0.6 | | | |
| **Roof** | Continuous Insulation | or | Roof Cavity Insulation | | Continuous Insulation | or | Roof Cavity Insulation | | Continuous Insulation | or | Roof Cavity Insulation | | Continuous Insulation | or | Roof Cavity Insulation | |
| **All-Wood Joist/Truss** *Minimum R-Value* | 19 | | 25 | | 19 | | 25 | | 23 | | 30 | | 23 | | 30 | |
| **Nonwood Joist/Truss** *Minimum R-Value* | 20 | | 25 | | 20 | | 25 | | 24 | | 30 | | 24 | | 30 | |
| **Concrete Slab or Deck** *Minimum R-Value* | 19 | | NA | | 19 | | NA | | 23 | | NA | | 23 | | NA | |
| **Metal Purlin with Thermal Break** *Minimum R-Value* | 20 | | 30 | | 20 | | 30 | | 24 | | X | | 24 | | 38 | |
| **Metal Purlin without Thermal Break** *Minimum R-Value* | 20 | | X | | 20 | | X | | 24 | | X | | 24 | | NA | |
| **Floor** | Continuous Insulation | or | Cavity Insulation | | Continuous Insulation | or | Cavity Insulation | | Continuous Insulation | or | Cavity Insulation | | Continuous Insulation | or | Cavity Insulation | |
| **All-Wood Joist/Truss** *Minimum R-Value* | 22 | | 25 | | 22 | | 25 | | 22 | | 25 | | 22 | | 25 | |
| **Nonwood Joist/Truss** *Minimum R-Value* | 23 | | 30 | | 23 | | 30 | | 23 | | 30 | | 23 | | 30 | |
| **Concrete Slab or Deck** *Minimum R-Value* | 22 | | NA | | 22 | | NA | | 22 | | NA | | 22 | | NA | |
| **Slab Edge or Basement Walls** | Insulation | | | | Insulation | | | | Insulation | | | | Insulation | | | |
| *Minimum R-Value* | 0 | | | | 8 | | | | 8 | | | | 8 | | | |

Notes:

(a) For walls next to unconditioned spaces, use the Low Fenestration Area wall requirements.

(b) Where values are shown for both cavity and continuous insulation, both requirements must be met.

(c) Cavity insulation is insulation between framing members or furring strips and does not refer to integral insulation in CMUs.

(d) Continuous insulation is insulation that is continuous across structural members, and its effectiveness is undimished by compression or bridging.

(e) Integral insulation in concrete masonry units may be perlite, vermiculite, or other insulating material. Minimum R-values are in addition to insulation in CMU voids.

(f) Use of the Other Masonry Walls category is restricted to walls weighing 35 lb/ft2 or more; lightweight masonry veneers and unfilled CMUs <8 in. in thickness do not qualify.

- "NA" indicates the category is not applicable.
- A minimum R-value of zero indicates no insulation is required.
- "Any" indicates any available product will comply.
- "X" indicates no complying option exists in the prescriptive packages.